

CURRICULUM VITAE - Dan Grois, Ph.D.

March, 2022

1. BRIEF SUMMARY

- *Best Associate Editor Award* of the IEEE Transactions on Circuits and Systems for Video Technology Journal (TCSVT) for the year 2021;
- Marie Skłodowska-Curie Fellow (2 times), Alain Bensoussan Fellow, Kreitman Fellow (2 times);
- Tutorial speaker for at top-tier conferences: *IEEE ICIP, IEEE ICME* and *IEEE ICCE* for “*HEVC/H.265 Video Coding Standard (version 2) Including Range, Scalable, and Multiview Extensions*”;
- Author of the book *in preparation* titled “*High Efficiency Video Coding – A Guide to the HEVC Standard and its Extensions*”, Cambridge University Press, UK;
- As a part of the Joint Collaborative Team on Video Coding (JCT-VC), received the Emmy Engineering Award for his contribution to the H.265/MPEG-HEVC video coding standard;
- More than 90 publications, including top-tier journal and conference papers, book chapters, etc.;
- IEEE *Senior* Member;
- Israeli Head of Delegation (HoD) and expert participant of ISO/IEC JTC 1/SC 29 MPEG/JPEG (Coding of Audio, Picture, Multimedia and Hypermedia Information) standardization meetings, recently developing H.265/MPEG-HEVC, EVC, LCEVC, and VVC video coding standards;
- Expert participant of ISO/IEC JTC 1/SC 41 (Internet of Things and Related Technologies), ISO/IEC JTC 1/SC 42 (Artificial Intelligence), ISO/TC 307 (Blockchain and distributed ledger technologies) standardization meetings and ISO/IEC JTC 1 (Information Technologies);
- Associate Editor of the *IEEE Transactions on Circuits and Systems for Video Journal*.
- Department Editor on Industry and Standards of the *IEEE Multimedia Magazine*.

2. PERSONAL DATA

Dan Grois

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Israel

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Personal Website: <https://grois.com>

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3. PROFESSIONAL EXPERIENCE

- **(2017 – Present) Principal Researcher, Comcast**
 - R&D of deep learning/reinforcement learning/machine learning techniques for video coding;
 - R&D of future video coding technologies;
 - R&D of perceptual video coding techniques and tools;

- R&D of pre-processing techniques based on perceptual quality;
 - Focusing on HDR and UHD 10-bit video.
- **(2016 – Present) Co-founder and CEO, NativeLOOK Ltd.**
 - Developing revolutionary voice-controlled low power IoT devices, which allow to make real-time decisions and object recognition based on Artificial Intelligence/Deep Learning patent pending technology, further incorporating blockchain technology for privacy protection and secure content exchange.
 - **(2020 – Present) Professional Evaluator of the Israel Innovation Authority (Chief Scientist Office)**
 - Performing professional evaluations of funding requests in the field of Computer Vision, Neural Networks, AI/ML/DL, AR/VR, Software/Software Engineering, Signal Processing, Video Streaming, Video/Image Compression, Electronics, Communication Networks, etc.
 - **(2017 – Present) Providing R&D and Consulting Services to Industrial and Academic Entities**
 - Software/Hardware development;
 - Research and Development in the field of video/image processing and coding, video streaming, communication networks, network protocols, implementation of advanced/future technologies, etc.;
 - IP development and strategic planning.
 - **(May 2016 – August 2017) Senior Researcher, Fraunhofer HHI**
 - Researching techniques and algorithms beyond HEVC;
 - Conducting performance evaluations of state-of-the-art video codecs, including JEM, HM, JM, x265, VP9, AV1.
 - **(May 2014 – April 2016) PROVISION ITN - FP7 MSCA, Visiting Researcher, Fraunhofer HHI, Marie Skłodowska-Curie Fellowship**
 - *Marie Curie Fellow* at the Perceptually Optimized Video Compression (PROVISION) Initial Training Network (ITN);
 - Performing a research in the field of video compression with a strong emphasis on developing perceptual video compression tools and techniques to be integrated in the next generation video compression standard (i.e. the successor of the H.265/MPEG-HEVC standard);
 - Specifying, developing and maintaining the ITN reference software (i.e., the test model) as well as defining test data and core experiments.
 - **(May 2013 – Apr. 2014) Visiting Researcher, Fraunhofer HHI, ERCIM Program - Alain Bensoussan Fellowship (FP7 Marie Skłodowska-Curie Actions)**
 - *Marie Curie Fellow* at ERCIM Program (Alain Bensoussan Fellowship);
 - Developing the HEVC-based real-time encoding/decoding techniques and algorithms;
 - Conducting performance assessments of various video codecs.

- **(May 2011 – Apr. 2013) Multimedia Research Laboratory: Post-Doctoral Senior Principal Researcher at the Net HD Consortium (MAGNET Program of the Israeli Chief Scientist, Israeli Ministry of Trade and Industry)**
 - Leading a large research group of *undergraduate/graduate students* in various projects, mainly involving cooperation with leading Israeli Hi-Tech companies;
 - Developing a new technology to be able to increase the effective bandwidth of the networks by using video adaptation, multi-layer cache and P2P networks without increasing the physical links;
 - Developing an efficient adaptive H.264/SVC live video streaming with ultra-low delay by using advanced network error protection and pre-processing techniques.

- **(Apr. 2010 – Apr. 2011) Multimedia Research Laboratory: Senior Principal Researcher at the Negev Consortium (MAGNET Program of the Israeli Chief Scientist, Israeli Ministry of Trade and Industry)**
 - Leading a large research group of *undergraduate/graduate students* in the Negev Consortium, while cooperating with leading Israeli Hi-Tech companies for developing an efficient encoder for adaptive Scalable Video Coding (SVC);
 - Developing advanced pre-processing techniques by using Computational-Complexity-Rate-Distortion (C-R-D) analysis.

- **(Dec. 2007 – Jun. 2010) Software/Electronics Engineer at the Senior Patent Attorney Position, Reinhold Cohn & Partners, Tel-Aviv, Israel**
 - Drafting and prosecuting hundreds of patent applications, mainly in computer science/electronics engineering/network communication fields;
 - Providing consultations on both general and strategic matters in these fields; Conducting various IP evaluations;
 - Conducting due-diligence processes, providing expert opinions, developing companies patent protection strategies, performing patent searches, etc.

- **(May 2004 - Dec. 2007) Software/Electronics Engineer at the Patent Attorney Position, Luzzatto & Luzzatto, Omer, Israel**
 - Starting to work as a trainee (between 2004-2006), while performing the same tasks as a patent attorney;
 - Drafting and prosecuting hundreds of patent applications, mainly in computer science/electronics engineering/network communication fields;
 - Providing consultations on both general and strategic matters in these fields; Conducting various IP evaluations;
 - Conducting due-diligence processes, performing patent searches, developing companies patent protection strategies, providing expert opinions, and handling many other tasks, etc.

- **(2001 - May 2003) Software/System Engineer Position, Israel Aerospace Industries (IAI) Ltd., Beer-Yakov, Israel**
 - Designing electronics boards;
 - Writing testing programs for verification and validation of electrical characteristics of integrated circuits, components, sub-components and systems;
 - Performing simulations of various communication systems;
 - Performing system integration.
- **(2000) Software/Electronics Engineer Position, Motorola Inc., Tel-Aviv, Israel**
 - Defining electrical and electronics components.
- **(1997-1998) Quality Assurance Engineer Position, Eltek Ltd., Petah-Tikva, Israel**
 - Mostly working at the position of a Quality Assurance Engineer ;
 - Performing quality control of printed circuit boards (PCBs).

4. ACADEMIC DEGREES

- 2013-2017 **Post-Doctoral Senior Researcher** at Fraunhofer HHI, ERCIM Program - Alain Bensoussan Fellowship, Marie Curie Fellowship.
- 2011-2013 **Post-Doctoral Senior Principal Researcher** at the Multimedia Laboratory, Communication Systems Engineering Department, Ben-Gurion University of the Negev (BGU), Israel.
- 2006 – 2011 **Ph.D.** degree in Video and Image Compression/Processing at the Communication Systems Engineering Department, Ben-Gurion University of the Negev (BGU), Israel. Doctoral Thesis supervisor: Dr. O. Hadar. Doctoral Thesis: "*Computational Complexity and Rate-Distortion Scalable Video Coding Optimization*". Average Grade: 95/100.
- 2003 – 2006 **M.Sc.** degree in Video and Image Compression/Processing at the Electro-Optics Unit, Ben-Gurion University of the Negev, Israel. Thesis supervisor: Dr. O. Hadar. Thesis: "*Time-Rate-Distortion Analysis for Optimizing the H.264/AVC Video Compression*" Average Grade: 93/100.
- 1998-2002 **B.Sc.** degree at the Electrical and Computer Engineering Department, Ben-Gurion University of the Negev, Israel. Final project supervisor: Prof. S. Ben-Yakov.

5. TEACHING EXPERIENCE

5.1 Lecturer

- “Image Coding and Processing with Matlab” graduate course for IDF officers, 2019, Tzrifin.
- “Video Coding and Processing” graduate course for IDF officers, 2018, Tzrifin.

- “Image Coding and Processing” graduate course for IDF officers, 2015, Tzrifin.
- "Multimedia Compression" undergraduate course, 2013, Department of Communication Systems Engineering, Ben-Gurion University of the Negev, Beer-Sheva.
- “Image Coding and Processing” graduate course for IDF officers, 2012, Tzrifin.
- "Protocols and Computer Networks" graduate course, 2012, Computer Science Department, Hadassah Academic College, Jerusalem.

5.2 Teaching Assistant

- "Multimedia Compression" undergraduate course, 2011, 2012, Department of Communication Systems Engineering, Ben-Gurion University of the Negev, Beer-Sheva.
- "Video and Audio Transmission over the Internet" undergraduate course, 2011, 2012, Department of Communication Systems Engineering, Ben-Gurion University of the Negev, Beer-Sheva.

6. ACADEMIC AND PROFESSIONAL AWARDS/GRANTS

- 2021 - Best Associate Editor Award of the IEEE Transactions on Circuits and Systems for Video Technology Journal (TCSVT) for the year 2021;
- 2017 - As a part of the Joint Collaborative Team on Video Coding (JCT-VC), received the Emmy Engineering Award for his contribution to the H.265/MPEG-HEVC video coding standard.
- 2014-2016 - Marie Skłodowska-Curie Fellowship (FP7 MSCA).
- 2013/2014 - ERCIM "Alain Bensoussan" Fellowship/Marie Skłodowska-Curie Actions (FP7 MSCA).
- 2013 - MAGNETON Program of the Israeli Chief Scientist, Israeli Ministry of Trade and Industry (\$115,000)
- 2012 - Kreitman Fellowship (\$ 25,000).
- 2012- NetHD Consortium, MAGNET Program of the Israeli Chief Scientist, Israeli Ministry of Trade and Industry (\$ 65,000).
- 2011 - Kreitman Fellowship (\$ 25,000).
- IEEE *Senior* Member Nomination (2011).
- 2011 - NetHD Consortium, MAGNET Program of the Israeli Chief Scientist, Israeli Ministry of Trade and Industry (\$ 65,000).
- 2010/2011 - BGU Negev Consortium, MAGNET Program of the Israeli Chief Scientist, Israeli Ministry of Trade and Industry (\$ 180,000).

7. TALKS/TUTORIALS

- **Dan Grois**, “Comparison Assessment of Emerging EVC and VVC Video Coding Standards with HEVC and AV1”, *High Mile Video 2020*, Denver, USA, Dec. 1-4, 2020.
- **Dan Grois**, “Deep Neural Networks for Video Coding: Recent Advances in Standardization”, *High Mile Video 2020*, Denver, USA, Dec. 1-4, 2020.
- **Dan Grois**, “Deep Neural Networks for Video Coding”, *High Mile Video 2019*, Denver, USA, Jul. 30-Jul. 31, 2019.

- **Dan Grois**, “Recent Advances in Objective Perceptual Video Quality Metrics: Is PSNR Going to Stay Forever?”, *The 5th International Professor’s Day on ICT Algorithm Design (ICTAD)*, Moscow, Russia, Nov. 28-29, 2018.
- **Dan Grois**, “Quality Assessments of Popular Video Codecs: Performance Analysis and Future Perspectives”, *Huawei Invited Talk*, Moscow, Russia, Nov. 27, 2018.
- **Dan Grois**, “Recent Advances in Objective Perceptual Video Quality Metrics: Is PSNR Going to Stay Forever?”, *Virtual Comcast Conference*, Nov. 26, 2018.
- **Dan Grois**, “Video Coding and HEVC”, *High Mile Video 2018*, Denver, USA, Jul. 31-Aug. 1, 2018.
- **Dan Grois**, “Introduction to the High Efficiency Video Coding”, Philadelphia, USA, Jan. 31, 2018.
- **Dan Grois**, “Introduction to the High Efficiency Video Coding and High Dynamic Range”, *DASH-IF*, Denver, USA, Aug. 10, 2017.
- **Dan Grois**, “The High Efficiency Video Coding (HEVC) Standard: Tools, Applications, and Performance”, Huawei Strategy and Technology Workshop (STW), May 16-18, 2017, Shenzhen, China.
- **Dan Grois**, Benjamin Bross, Detlev Marpe, and Karsten Suhring (Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute (HHI), Berlin, Germany), “HEVC/H.265 Video Coding Standard (v. 2) Including Range, Scalable, and Multiview Extensions”, presented at *IEEE International Conference on Image Processing (ICIP)*, Québec City, Canada, Sept. 27-30, 2015.
- **Dan Grois**, Benjamin Bross, Detlev Marpe, and Karsten Suhring (Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute (HHI), Berlin, Germany), “HEVC/H.265 Video Coding Standard including the Range Extensions, Scalable Extensions, and Multiview Extensions”, presented at *IEEE International Conference on Consumer Electronics - Berlin (ICCE-Berlin)*, Berlin, Germany, Sept. 6-9, 2015.
- **Dan Grois**, Benjamin Bross, Detlev Marpe, and Karsten Suhring (Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute (HHI), Berlin, Germany), “HEVC/H.265 Video Coding Standard (Version 2) including the Range Extensions, Scalable Extensions, and Multiview Extensions”, presented at *IEEE International Conference on Multimedia & Expo (ICME)*, Torino, Italy, Jun. 29 -Jul. 3, 2015.

8. MEMBERSHIP IN PROFESSIONAL SOCIETIES

- IEEE *Senior* Member - Institute of Electrical and Electronics Engineers.
- ACM Member - Association for Computing Machinery.
- SPIE Member - International Society for Optics and Photonics.
- SCTE - Society of Cable Telecommunications Engineers.
- ISBE – International Society of Broadband Experts.
- IDU – Israel’s Directors Union.
- Bluetooth SIG - Bluetooth Special Interest Group.
- ISO - International Organization for Standardization.
- MPEG – Moving Picture Experts Group.
- JPEG - Joint Photographic Experts Group.

- SMPTE Member - Society of Motion Picture and Television Engineers.
- ISOC Member - Internet Society.
- IETF - Participant of the Internet Engineering Task Force.

9. SCIENTIFIC JOURNAL/CONFERENCES REFEREE

- IEEE Transactions on Image Processing;
- IEEE Transactions on Circuits and Systems for Video Technology;
- IEEE Transactions on Signal Processing;
- IEEE Transactions on Multimedia;
- IEEE Transactions on Broadcasting;
- Journal of Visual Communication and Image Representation, Elsevier;
- SPIE Optical Engineering Journal;
- IEEE Sensors Journal;
- Journal of Computers and Electrical Engineering, Elsevier;
- Imaging Science Journal;
- IGI Global Publisher;
- Top-Tier IEEE Conferences.

10. SCIENTIFIC JOURNAL EDITOR

- Department Editor on Industry and Standards of the IEEE Multimedia Magazine, starting from 2022.
- Associate Editor of the IEEE Transactions on Circuits and Systems for Video Technology Journal, starting from 2021.
- Guest Editor of the Special Section on Video Compression Technologies, SPIE Optical Engineering Journal, 2013.

11. CONFERENCE TECHNICAL PROGRAM COMMITTEE (TPC)

- ACM Mile-High Video (MHV) conference, Denver, USA, 2022.
- SPIE, Applications of Digital Image Processing, San-Diego, USA, 2017, 2018, 2019, 2020, 2021.
- IEEE International Conference on Consumer Electronics (ICCE), Las-Vegas, USA, 2013, 2014, 2015.
- IEEE International Conference on Consumer Electronics (ICCE-Berlin), Berlin, Germany, 2013, 2014.
- IEEE International Conference on Power and Energy (PECON 2012).
- IEEE Symposium on Industrial Electronics & Applications (ISIEA 2012).

12. CONFERENCE SESSION CHAIR/CO-CHAIR

- IEEE International Conference on Visual Communications and Image Processing (VCIP), Suzhou, China, 2022.
- ACM Mile High Video (MHV), Denver, Colorado, 2022.
- SPIE, Applications of Digital Image Processing XLI, San-Diego, US, 2019, 2020.
- IEEE Visual Communications and Image Processing (VCIP), St. Petersburg, Florida, USA, 2017.
- IEEE Consumer Electronics Berlin (ICCE-Berlin), 2013.

- IEEE International Conference on Consumer Electronics (ICCE 2013), Sessions: "GPU Processing", "Video Coding 1", "Video Coding 2".
- IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB 2011).

13. ACTIVE PARTICIPATION IN STANDARDIZATION MEETINGS

- ISO/IEC JTC 1/SC 29 – physical and online meetings;
- ISO/IEC JTC 1/SC 42 – online meetings;
- ISO/TC 307 – online meetings;
- ISO/IEC JTC1 - online meetings;
- JVET, JCT-VC, MPEG, JPEG, Online, Jan. 2022;
- JVET, JCT-VC, MPEG, JPEG, Online, Oct. 2021;
- JVET, JCT-VC, MPEG, JPEG, Online, Jul. 2021;
- JVET, JCT-VC, MPEG, JPEG, Online, Apr. 2021;
- JVET, JCT-VC, MPEG, JPEG, Online, Jan. 2021;
- JVET, JCT-VC, MPEG, JPEG, Online, Oct. 2020;
- JVET, JCT-VC, MPEG, JPEG, Online, Jul. 2020;
- JVET, JCT-VC, MPEG, JPEG, Online, Apr. 2020;
- JVET, JCT-VC, MPEG, Brussels, Belgium, 7-17 Jan. 2020;
- ISO/IEC JTC1, New Delhi, India, 4-8 Nov. 2019;
- JVET, JCT-VC, MPEG, SC29, Gothenburg, Sweden, 2-13 Oct. 2019;
- JVET, JCT-VC, MPEG, JPEG, Geneva, Switzerland, 19-29 Mar. 2019;
- JVET, JCT-VC, MPEG, Macau, China, 3-12 Oct. 2018;
- JVET, JCT-VC, MPEG, Ljubljana, Slovenia, 10-20 Jul. 2018;
- JVET, JCT-VC, MPEG, JPEG, San Diego, US, 10-20 Apr. 2018;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, San Diego, US, 18-26 Feb. 2016;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, Warsaw, Poland, 19-26 Jun. 2015;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, Geneva, Switzerland, 10-18 Feb. 2015;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, Strasburg, France, 17-24 Oct. 2014;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, Valencia, Spain, 27 Mar. - 4 Apr. 2014;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, San José, USA, 9-17 Jan. 2014;
- JCT-VC, JCT-3V, VCEG, MPEG, JPEG, Vienna, Austria, 25 Jul. - 2 Aug. 2013.

14. SUPERVISION OF GRADUATE/UNDERGRADUATE STUDENTS

14.1 Master of Science Students

- Georg Maier, "Fast Motion Estimation for a High Efficiency Video Coding (HEVC) Encoder" (2014).
- Sergey Fridland, "Adaptive Video Streaming by Using Scalable Video Coding over RTP" (2012).

14.2 Bachelor of Science Students

- Moshe Maman and Yosi Trabelsi, "Performance Evaluation and Computational Complexity Reduction of the High-Resolution HEVC-Based Intra-Coding vs. JPEG, JPEG2000, JPEG-LS, JPEG-XR" (2012).
- Amit Mulayoff and Benaya Itzhaki, "Performance Evaluation and Computational Complexity Reduction of the High-Resolution HEVC vs. H.264/AVC" (2012).
- Alex Glukhovsky and Yotam Vaknin, "Live Video Streaming by Adaptively Varying a Number of Scalable Video Coding Layers Prior to the Encoding" (2012).
- David Reubeni and Leonid Feingold, "Adaptive Change of Scalable Video Coding Parameters During the Live Video Streaming" (2012).
- Omri Cohen and Ilai Kordonsky, "Adaptive Live Multicast Video Streaming by Using MGS/CGS Scalability of the H.264/SVC" (2012).
- Guy Itzhak and Ohad Alali, "Adaptive Live Multicast Video Streaming by Using Spatial and Temporal Scalability of the H.264/SVC" (2012).
- Daniel Kaufman and Guy Shalom, "Adaptive Pre-/Post-Filtering for Live SVC Streaming" (2011).
- Itay Bochner and Tal Ben-Avraham, "Pre-/Post-Filtering for SVC Streaming" (2011).
- Ronen Varfman and Idan Ori, "Complexity Controller for Scalable Video Coding" (2010).
- Gay Azulay and Adir Atias, "Pre-/Post Filtering for Scalable Video Coding" (2010).
- Matan Unger and Oren Bahman, "Adaptive Bit-Rate Control For Scalable Video Coding" (2010).
- Ran Dubin and Aviad Hadarian, "Adjustable and Scalable Region-of-Interest Video Coding" (2009).
- Maayan David and Esti Hagag, "Quality Evaluation and Comparison of SVC Encoders" (2009).

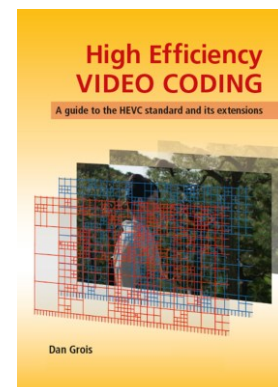
15. LIST OF PUBLICATIONS

15.1 Books

- **Grois Dan**, "High Efficiency Video Coding – A Guide to the HEVC Standard and its Extensions", *in preparation*, Cambridge University Press, UK, to be published in 2022.

15.2 Book Chapters

- **Grois, Dan** and Hadar, Ofer, Region-of-Interest Processing and Coding Techniques - Overview of Recent Trends and Directions, *Intelligent Multimedia Technologies for Networking Applications: Techniques and Tools*, ed. Dimitris Kanellopoulos, IGI Global, pp. 126-155, 2013.
- **Grois, Dan** and Hadar, Ofer, Recent Advances in Computational Complexity Techniques for Video Coding Applications, *Intelligent Multimedia Technologies for Networking - Techniques and Tools*, ed. Dimitris Kanellopoulos, IGI Global, pp. 156-195, 2013.



- **Grois, Dan** and Hadar, Ofer. Advances in Region-of-Interest Video and Image Processing, Multimedia Networking and Coding, ed. Reuben A. Farrugia and Carl J. Debono, IGI Global, pp. 76-123, 2013.
- **Grois, Dan** and Hadar, Ofer. Recent Advances in Peer-to-Peer Video Streaming by Using Scalable Video Coding. In Streaming Media with Peer-to-Peer Networks: Wireless Perspectives, ed. Martin Fleury and Nadia Qadri, IGI Global, pp. 162-195, 2012.
- **Grois, Dan** and Hadar, Ofer. Recent Advances in Watermarking for Scalable Video Coding, Watermarking - Volume 2, Dr. Mithun Das Gupta (Ed.), InTech, pp. 1-16, 2012.
- **Grois, Dan** and Hadar, Ofer. Recent Advances in Region-of-Interest Coding, In Recent Advances on Video Coding, Javier Del Ser Lorente (Ed.), InTech, pp. 49-76, 2011.
- **Grois, Dan**, Kaminsky, Evgeny and Hadar, Ofer. Optimization Methods for H.264/AVC Video Coding, In Handbook of MPEG Applications: Standards in Practice, (eds M. C. Angelides and H. Agius), John Wiley & Sons, Ltd, Chichester, UK, pp. 175-204, 2010.

15.3 Published Journal Articles

- **Grois Dan**, Giladi Alex, Choi Kiho, Park Min Woo, Piao Yinji, Park Minsoo, Choi Kwang Pyo, "Performance Comparison of Emerging EVC and VVC Video Coding Standards with HEVC and AV1," in *SMPTE Motion Imaging Journal*, vol. 130, no. 4, pp. 1-12, May 2021.
- Ramachandran Pradeep, Karadugattu Praveen Kumar, Giladi Alex, **Grois Dan**, Venkatesan Pooja, Hariharan Bhavna, Sampath Kavitha, Goswami Kalyan and Pikus Kevin, "Speed-Distortion Optimization: Tradeoffs in Open-Source HEVC Encoding," in *SMPTE Motion Imaging Journal*, vol. 129, no. 7, pp. 17-25, Aug. 2020.
- Georg Maier, Benjamin Bross, **Dan Grois**, Detlev Marpe, Heiko Schwarz, Remco Veltkamp, Thomas Wiegand, "Context-Based Fractional Sample Refinement for HEVC Compliant Encoding", *IEEE Transactions on Circuits and Systems for Video Technology*, vol.PP, no.99, pp.1-1, 2016.
- **Grois Dan** and Hadar Ofer, "Complexity-Aware Adaptive Pre-Processing Scheme for Region-of-Interest Spatial Scalable Video Coding," *IEEE Transactions on Circuits and Systems for Video Technology*, vol.24, no.6, pp.1025-1039, Jun. 2014.
- **Grois Dan** and Hadar Ofer, "Efficient Region-of-Interest Scalable Video Coding with Adaptive Bit-Rate Control," *Advances in Multimedia*, vol. 2013, Article ID 281593, 17 pages, 2013.
- **Grois Dan**, Kaminsky Evgeny, and Hadar Ofer, "Efficient Real-Time Video-in-Video Insertion into a Pre-Encoded Video Stream," *ISRN Signal Processing*, vol. 2011, pp. 1-11, 2011.
- Kaminsky Engeny, **Grois Dan**, and Hadar Ofer, "Dynamic Computational Complexity and Bit Allocation for Optimizing H.264/AVC Video Compression", *Journal of Visual Communication and Image Representation*, vol. 19, iss. 1, Jan. 2008, pp. 56-74.

- **Grois Dan**, Shcherback Igor, Danov Tatiana, and Yadid-Pecht Orly, "Theoretical Approach to CMOS APS PSF and MTF Modeling - Evaluation," *IEEE Sensors Journal*, vol.6, no.1, pp. 118- 124, Feb. 2006.

15.4 Conference Papers

- **Grois, Dan**; Giladi, Alex; Karadugattu, Praveen Kumar; Balasubramanian, Niranjankumar; "Novel Temporal Masking Framework for Perceptually Optimized Video Coding", ACM MHV 2022, Denver, USA, 1-3 Mar. 2022.
- **Grois, Dan**; Giladi, Alex; Choi, Kiho; Park, Min Woo; Piao, Yinji; Park, Minsoo; Choi, Kwang Pyo, "Performance Comparison of Emerging EVC and VVC Video Coding Standards with HEVC and AV1", *SMPTE 2020*, Online, 10-12 Nov. 2020.
- **Grois, Dan**, Giladi, Alex, "HVS-Based Perceptual Quantization Matrices for HDR HEVC Video Coding for Mobile Devices", *International Broadcasting Convention (IBC) 2020*, Online, 11-15 Sept. 2020.
- Matheswaran, Aruna; Karadugattu, Praveen Kumar; Ramachandran, Pradeep; Giladi, Alex; **Grois, Dan**; Venkatesan, Pooja; Balk, Alex, "Open source framework for reduced-complexity multi-rate HEVC encoding," *Proc. SPIE 11510, Applications of Digital Image Processing XLIII*, 115101Y (25 August 2020);
- **Grois, Dan**, Giladi, Alex, "Perceptual quantization matrices for high dynamic range H.265/MPEG-HEVC video coding," *Proc. SPIE 11137, Applications of Digital Image Processing XLII*, 111370O (24 February 2020);
- Ramachandran Pradeep, Karadugattu Praveen Kumar, Giladi Alex, **Grois Dan**, Venkatesan Pooja, Hariharan Bhavna, Sampath Kavitha, Goswami Kalyan and Pikus Kevin, "Speed-Distortion Optimization: Tradeoffs in Open-Source HEVC Encoding," *SMPTE 2019*, Los Angeles, California, 2019, pp. 1-10.
- Kalyan Goswami, Bhavna Hariharan, Pradeep Ramachandran, Alex Giladi, **Dan Grois**, Kavitha Sampath, Aruna Matheswaran, Ashok Kumar Mishra, and Kevin Pikus, "Adaptive Multi-Resolution Encoding for ABR Streaming", accepted, IEEE International Conference on Image Processing (ICIP), pp. 1008-1012, Oct. 7-10, 2018.
- **Grois, Dan**, Nguyen, Tung and Marpe, Detlev, "Performance Comparison of AV1, JEM, VP9, and HEVC Encoders", *Proc. SPIE 10396, Applications of Digital Image Processing XL*, 103960L, 7-10 Aug., 2017.
- **Grois, Dan**, Nguyen, Tung and Marpe, Detlev, "Coding Efficiency Comparison of AV1/VP9, H.265/MPEG, HEVC and H.264/MPEG-AVC Encoders", *Picture Coding Symposium (PCS)*, pp. 1-5, 4-7 Dec., 2016.
- Georg Maier, Benjamin Bross, **Dan Grois**, Detlev Marpe, Heiko Schwarz, R.C. Veltkamp, Thomas Wiegand, "Pattern-based integer sample motion search strategies in the context of HEVC", *Proc. SPIE 9599, Applications of Digital Image Processing XXXVIII*, 95991A, Sept. 22, 2015.
- **Grois, Dan**, Marpe, Detlev, Tung, Nguyen and Hadar, Ofer, "Comparative Assessment of H.265/MPEG-HEVC, VP9, and H.264/MPEG-AVC Encoders for Low-Delay Video Applications", *Proc. SPIE 9217, Applications of Digital Image Processing XXXVII*, 92170Q, Sept. 23, 2014.

- **Grois, Dan**, Marpe, Detlev, Mulayoff, Amit, Itzhaky, Benaya and Hadar, Ofer, "Performance comparison of H.265/MPEG-HEVC, VP9, and H.264/MPEG-AVC encoders," *Picture Coding Symposium (PCS), 2013*, pp.394-397, 8-11 Dec. 2013.
- **Grois, Dan**, Hadar, Ofer and Marpe, Detlev, "Network-optimized adaptive SVC-based live video streaming," *Consumer Electronics Berlin (ICCE-Berlin), 2013. ICCE-Berlin 2013. IEEE Third International Conference on*, vol., no., pp.352-354, 9-11 Sept. 2013.
- **Grois, Dan** and Hadar, Ofer, "Recent Trends in Online Multimedia Education for Heterogeneous End-User Devices Based on Scalable Video Coding," *accepted to IEEE Global Engineering Education Conference*, Berlin, Mar. 13-15, 2013.
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